

(c) REMARKS

The claims are 12 and 13. Claim 12, the sole independent claim, has been amended has been amended to clarify what is regarded as the invention. The claims provide, *inter alia*, that a high-frequency power supply has a connecting portion which connects with one reactor. This is shown in Example 1, Fig. 1; Example 2, Fig. 8 and Example 3, Figs. 9-11.

In the Office Action, claims 12 and 13 were rejected under 35 U.S.C. § 112, second paragraph, for alleged indefiniteness in the limitation “one impedance regulation means is provided... on the side of the movable reactor”. To expedite prosecution on the merits, but without necessarily conceding the propriety of this rejection, Applicants have amended the claims according to the Examiner’s kind suggestion to recite that the connecting portion of the high-frequency power supply is on the exterior of the movable reactor and the electrode is the interior of the movable reactor. In view of the foregoing amendment, Applicants believe the claims to satisfy all of the requirements of Rule 112, and respectfully request withdrawal of the present rejection.

Claims 12 and 13 also stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over the combination of Japanese Patent Publication No. 11-319546 (Okamura et al.) in view of U.S. Patent No. 5,515,986 (Turlot et al.). The reasons for this rejection are respectfully traversed.

As amended, claim 12 is directed to a plasma treatment apparatus for individually treating a plurality of reactors having different impedances wherein each reactor conducts a different treatment. A connecting portion of the high-frequency power supply means is provided on the exterior of the movable reactor and connected with the

impedance regulatory means. The impedance regulatory means connects to an electrode on the interior of the movable reactor. As discussed in the specification, conventional plasma treatment systems often make it necessary to provide matching devices specifically designed for various conditions, thus increasing both the cost and complexity of construction for the apparatus as a whole. See specification, page 7, lines 20-27.

Conversely, the above features enable a simplified production system which further allows for lower cost while at the same time maintaining high operating efficiency and production flexibility. See page 12, lines 12-17.

The respective results between Example 1 and Comparative Example 1 demonstrate that when matching adjustment is not required, as enabled under the present configuration, a more efficient deposition operation results. See specification, pages 34 and 35. Consequently, Applicants' invention satisfies a need in the art for a low cost, simplified plasma treatment apparatus capable of matching impedances under different conditions. See page 8, lines 10-15.

The Examiner contends that "it would have been obvious . . . to provide the reactors of Okamura et al. with a plurality of impedance regulation means as taught by Turlot et al. in order to adjust the process conditions for each reactor." Applicants respectfully disagree, and submit that doing so would not only fail to remedy the deficiencies of Okamura, but would also preclude attaining the beneficial advantages that the present invention brings to the art.

As summarized at column 1, lines 16-24, Turlot discloses a technique for parallel processing a number of work-pieces. Here, the number of plasma treatment operating cycles is minimized in order to optimize handling effort. Figure 5(c) illustrates

how almost the same power is simultaneously supplied from one power supply means to a plurality of reactors to conduct the same processing. See Column 7, lines 7-9. For this purpose, the reference teaches that a plurality of reactors are connected to one power supply means. As shown in column 7, lines 1-9 all the chambers of Turlot are fed from a central RF generator with a centralized matching network and, if necessary, with additional matching networks in chamber specific adjustment.

In contrast, in the present invention, only one reactor is connected to one power supply means (see, e.g., Figure 8, wherein each reactor 201 has its own power supply means 510). Although a plurality of reactors having different impedances are successively connected, treatments of different conditions can be accomplished by one matching device, as explained in the specification at page 7, line 5 to page 8, line 15. Evidence of such operation likewise appears in Example 1.

More significantly, however, unlike the present invention, in Turlot there is provided an impedance regulation means (inductions) for each electrode divided from the RF Power Matching Box. See Column 7, lines 7-9 and Figure 5C).

Under Applicants' configuration, only a single impedance regulation means is provided for each reactor, between the connecting portion of the power supply and the electrode on the inside of the reactor. As a result of this construction, when the reactors having different impedances are used, matching devices specifically designed for respective conditions are not required. Thus, the present configuration achieves a beneficial consequence in the art by lowering the cost and improving efficiency for such apparatus. See specification, page 8, lines 10-15.

According to the MPEP, “[a] prima facie case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention.” MPEP § 2144.05(III) at 2100–143 (citing *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997)). Moreover, by not providing a single impedance regulation means on the exterior of each reactor, Turlot invites a longer and more complicated deposition operation since high frequency matching devices in the high frequency power supply means will likely need to be replaced in order to match different impedances. The Examiner notes at page 5 of the Office Action that “Turlot was simply applied for the teaching of a plurality of impedance regulations means provided correspondingly to the impedances in each reactor”. However, based on the foregoing, Applicants respectfully believe this not to be the case; instead, Turlot is understood as merely teaching an impedance regulation means provided for each electrode.

Accordingly, Claim 12 is seen as patentable over any possible combination of the cited references, and withdrawal of the rejection under 35 U.S.C. § 103(a) is earnestly requested. Claim 13 depends from claim 12, and is believed to be patentable for at least the same reasons as discussed above. Thus, the amendment should be entered, claims should be allowed and the case passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Peter Saxon", written over a horizontal line.

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